BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Diploma in Engineering Pearson BTEC International Level 3 Diploma in Electrical and Electronic Engineering Pearson BTEC International Level 3 Extended Diploma in Engineering Pearson BTEC International Level 3 Extended Diploma in Electrical and Electronic Engineering
Unit number and title	**Unit 23: Digital and Analogue Electronic Systems**
Learning aim(s)	**C:** Carry out fault finding safely on complex electronic systems as applied in industry
Assignment title	3 Fault finding in complex electronic circuits
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	Your Training Manager has just carried out your latest Apprenticeship review and has decided with your Supervisor and Senior Field Service Technician that you can now move on to using the knowledge and skills you have gained while working in the Field Service Department to start identifying faults in complex electronic systems. Successful completion of this stage of your training will allow you to carry out fault-finding and repairs independently.

Task 1	a) Identify the characteristics and applications of at least 5 fault-finding techniques and how fault-finding aids can be used to simplify the fault-finding process b) Use the data you obtained in Assessment 2 (or that supplied by tour Supervisor/Assessor), along with other resources, such as fault-finding aids to develop a fault-finding test plan for each of the supplied circuits. c) Use your fault-finding test plans to identify a single fault on each of the three circuits. d) Record your results, step-by-step, on a standardised fault-finding report form. e) Collate all your resources and fault-finding records in a portfolio.
Checklist of evidence required	A log book recording fault finding in analogue, digital and mixed electronic systems with a single fault. The evidence should include block diagrams, fault-finding plans identifying techniques and selection of instrumentation, test points, test reports, results and conclusions. The evidence should be supported by Observation Records/Witness Statements.

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
23/C.D3	Diagnose correctly a single fault in each of the three systems, using fault-finding plans, documentation, skills and working safely.
23/C.M4	Produce a detailed fault-finding plan for the three systems that includes signal conversion
23/C.M5	Test each of the three systems, correctly diagnosing a single fault in at least the mixed system and the analogue or the digital system
23/C.P6	Produce a fault-finding plan for an analogue, a digital and a mixed electronic system that includes signal conversion and safe working practice.
23/C.P7	Test each of the three systems safely, correctly diagnosing a single fault in at least the analogue or the digital system.

Sources of information to support you with this Assignment	**Books** Troubleshooting Electronic Equipment; Khandpur RS; McGraw-Hill Education TAB (2006); ISBN-13: 978-0071477314 Electronics: A systems approach; Storey N; Prentice Hall (2013); ISBN-13: 978-0273773276 Practical Electronics for Inventors; Scherz P Monk S; McGraw-Hill Education TAB (2016); ISBN-13: 978-1259587542 Electronics; Sparkes JJ et al; Nelson Thornes Ltd (2003); ISBN 0 7487 7036 4 Electronic devices; Floyd T L; Pearson (2007); ISBN-13: 978-0136155812 Digital fundamentals; Floyd T L; Pearson (2015); ISBN-13: 978-1292075983 BTEC Nationals Engineering Student Book + Activebook: For the 2016 Specifications (BTEC Nationals Engineering 2016); Buckenham A et al; Pearson Education (2016); ISBN-13: 978-1292141008 **Websites** electronics-tutorials.ws qualifications.pearson.com/en/support/published-resources.html#step1
Other assessment materials attached to this Assignment Brief	Complex analogue and digital systems with switched faults, e circuit and block diagram schematics and fault-finding report templates.